In The Claims

Please amend the claims as follows:

1. (currently amended) An apparatus for measuring at least one parameter of a process flow flowing within a pipe, the apparatus comprising:

at least two strain sensors attached onto the outer surface of the pipe at different axial locations along the pipe, each of the strain sensors providing a respective strain signal indicative of a pressure disturbance within the pipe at a corresponding axial position, each of the strain sensors comprising piezoelectric film material having a pair of conductors disposed on opposing surfaces of the piezoelectric material; ~~whereby the piezoelectric film is attached to the outer surface of the pipe;~~ and

a signal processor , responsive to said strain signals, which provides a signal indicative of at least one parameter of the process flow flowing within the pipe.

2. (canceled)

3. (original) The apparatus of claim 1, wherein the process flow is one of a single phase fluid and a multi-phase mixture.

4. (canceled)

5. (canceled)

6. (canceled)

7. (canceled)

8. (canceled)

9. (previously presented) The apparatus of claim 1, wherein the piezoelectric film material includes at least one of polyvinylchlorine fluoride (PDVF), polymer film and flexible PZT.

10. (canceled)

11. (previously presented) The apparatus of claim 1, wherein each of the pairs of the conductors is a coating of silver ink.

12. (previously presented) The apparatus of claim 1, wherein the piezoelectric film material extends around a substantial portion of the circumference of the pipe.

13. (previously presented) The apparatus of claim 1, wherein the piezoelectric film material has a thickness greater than 8 mm.

14. (previously presented) The apparatus of claim 1, wherein the piezoelectric film material has a thickness between 8 mm and 120 mm.

15. (currently amended) An apparatus for measuring at least one parameter of a process flow flowing within a pipe, the apparatus comprising:

at least two strain sensors attached onto the outer surface of the pipe at different axial locations along the pipe, each of the strain sensors providing a respective strain signal indicative of a pressure disturbance within the pipe at a corresponding axial position, each of the strain sensors comprising piezoelectric film material having a pair of conductors disposed on opposing surfaces of the piezoelectric material ~~The apparatus of claim 1, further includes~~ and an electrical insulator disposed between ~~the piezoelectric film material~~ each sensor and the pipe~~.~~ and

a signal processor , responsive to said strain signals, which provides a signal indicative of at least one parameter of the process flow flowing within the pipe.

16. (previously presented) The apparatus of claim 1, wherein the strain signals are indication of acoustic pressures propagating within the pipe.

17. (original) The apparatus of claim 1, wherein the parameter of the fluid is one of steam quality or "wetness", vapor/mass ratio, liquid/solid ratio, volumetric flow rate, mass flow rate, size of suspended particles, density, gas volume fraction, and enthalpy of the flow.

18. (currently amended) The apparatus of claim 1, wherein the signal processor determines the slope of an acoustic ridge in the ~~k-w~~ k-ω plane to determine a parameter of the process flow flowing in the pipe.

19. (currently amended) The apparatus of claim 1, wherein the strain signals are indication of vortical disturbances within the fluid flow.

20. (original) The apparatus of claim 19, wherein the parameter of the fluid is one of velocity of the process flow and the volumetric flow of the process fluid.

21. (currently amended) The apparatus of claim 1, wherein the signal processor determines the slope of a convective ridge in the ~~k-w~~ k-ω plane to determine the velocity of the fluid flowing in the pipe.

22. (original) The apparatus of claim 1, wherein the signal processor determines the volumetric flow rate of the fluid flowing in the pipe in response to the velocity of the fluid.

23. (previously presented) The apparatus of claim 1, wherein the signal processor generates a flow velocity signal indicative of the velocity of the fluid flowing within the pipe by cross-correlating the strain signals.

24. (original) The apparatus of claim 1 wherein each sensor measures an acoustic pressure and provides a signal indicative of an acoustic noise within the pipe.

25. (previously presented) The apparatus of claim 1 further comprising at least three of said strain sensors.

26. (canceled)

27. (previously presented) The apparatus of claim 1, wherein the strain sensors are mounted to the outer surface of the pipe by an adhesive.

28. (previously presented) The apparatus of claim 1, wherein the strain sensors include pressure sensors.